Programmable attenuator

AT5003505B1

Feature

1. Frequency:
   Frequency range: DC-50GHz
2. Attenuation
   Attenuation: 35dB
3. Connector
   Connector: 2.4mm
   Programming connector: electrical connector: Pitch: 2.54 mm × 2.54 mm; Cross-section of straight pins: 0.64 mm × 0.64 mm; Number of pins: 10.
4. Port VSWR
   Port VSWR: less than 1.9
5. Insert loss
   Insert loss: less than 3.5 dB (When 0 dB)
6. Attenuation accuracy(Unit: dB)

Attenuation	5	20	10
Accuracy	±1.5	±1.5	±1.5

7. Repeatability
   Repeatability: ≤0.05 dB (Typical value)
8. Maximum Input Power
   Maximum input power: 1 W (Continuous wave)
9. Minimum Service Life
   Minimum service life: 1 million times (per section)
10. Operating Temperature
    Operating temperature: -20 °C to 75 °C
11. Storage Temperature
    Storage temperature: -55 °C to 85 °C
12. Shock (Operating State)
    Shock (operating state): 10g 6 ms, three axes and six directions.

Mechanical Characteristics

1. Weight

Weight: 0.265 kg

2. Switching Speed

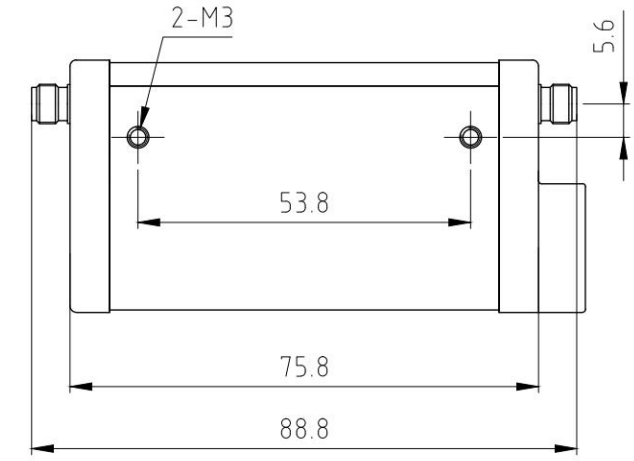
Switching speed: Maximum 20 ms

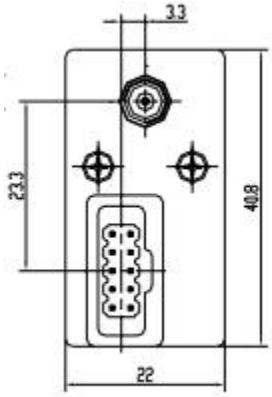
3. Relay Driving Voltage and Current

Relay driving voltage: 20 V to 28 V, rated voltage: 24 V

Relay driving current: 126 mA (at normal temperature and rated voltage, per stage)

4. Dimensions (Unit: mm)





Composition of Attenuation

The programmable attenuator consists of three parts internally. Each part can switch between the connection and attenuation through switching the through chips and attenuation chip. For example, the first part includes a through chip and a 5 dB attenuation chip, the second part includes a through chip and a 20 dB attenuation chip, and the third part includes a through chip and a 10 dB attenuation chip.

	Pin 1	Pin 2	Pin 3	Pin 4	Pin 5	Pin 6	Pin 7	Pin 8	Pin 9	Pin 10
3 section	Section1 Through	Section1 Attenuation	GND	Section2 Through	Section3 Through	/	/	Section3 Attenuation	Section2 Attenuation	VDC
Note: TTL drive, low voltage effective.										

Control Method

1. To drive the relays inside the programmable step attenuator, a DC voltage ranging from 20V to 28Vdc needs to be provided, and the driving current is 126 mA (under normal temperature and with a driving voltage of 24V, for each stage).
2. The relays are equipped with latching devices. Once the relays operate, the internal driving circuit will automatically cut off the power supply, resulting in low power consumption. The relay switching time ≤20ms.
3. To control the relays to choose between the through chip and the attenuation chip, it is necessary to input a TTL to the corresponding connector. The driving mode is triggered by the falling edge (the falling edge from the high level to the low level takes effect, and the duration of the low level needs to be ⩾20ms).

Note

1. When powering the programmable step attenuator, Pin 3 must be well grounded; otherwise, it may cause permanent damage to the internal components of the programmable step attenuator.
2. When installing the attenuator, in order to make it have better anti-seismic performance, please place the attenuator horizontally (that is, the mounting screws of the attenuator should be perpendicular to the horizontal plane).
3. The attenuation chips can only withstand a maximum power of 1W (CW). Therefore, please do not input power exceeding 1W (CW) into the port of this attenuator.

4. The ports of the programmable step attenuator are precision female connectors, which can only be connected to the connectors that match them. Meanwhile, when connecting, attention should be paid to whether the size of the port to be connected meets the requirements of national standards to avoid damaging the connectors and affecting the performance indicators and service life of the device. In addition, it is advisable to use a torque wrench when connecting and disconnecting the connectors. When the connectors are not in use, cover them with dust caps to prevent objects from entering the inside of the attenuator and affecting its performance.
5. The programmable step attenuator is a non-sealed attenuator. Please store it in a dry and dust-free environment.